PRELIMINARY DRAFT
FOR DISCUSSION PURPOSES ONLY

DISCUSSION OUTLINE
April 2, 2002

Prepared by
Ricondo & Associates, Inc.

AGENDA

I. DEMONSTRATION OF SIMULATION – EXISTING AIRFIELD, PLAN X AND PLAN W

II. POSSIBLE DESIGN CHANGES TO OPTIONS 1, 2, AND 5

III. OPERATIONAL QUESTIONS AND ASSUMPTIONS FOR SIMULATION OF FUTURE CONCEPTS

I. DEMONSTRATION OF SIMULATION – EXISTING AIRFIELD PLAN X AND W

II. POSSIBLE DESIGN CHANGES TO OPTIONS 1, 2, AND 5

1. Perimeter taxiways located around the end of a runway may be constructed to reduce the number of runway crossings. The FAA Chicago Airport District Office has indicated that it will not permit uncontrolled, independent taxi movements on perimeter taxiways that are located inside the Runway Protection Zone (RPZ) of active runways. Therefore, to provide independent taxi movements around the runway ends, taxiways should, when practical, be constructed around the RPZ. The distance from the approach end of the runway to the outer boundary of the approach RPZ is 2,700 feet (for runways with approach visibility minimums lower than ¾ mile). By providing independent taxi movements around the ends of the approach RPZs, reduction in runway length that may significantly impact payload performance of the departing aircraft will be required.

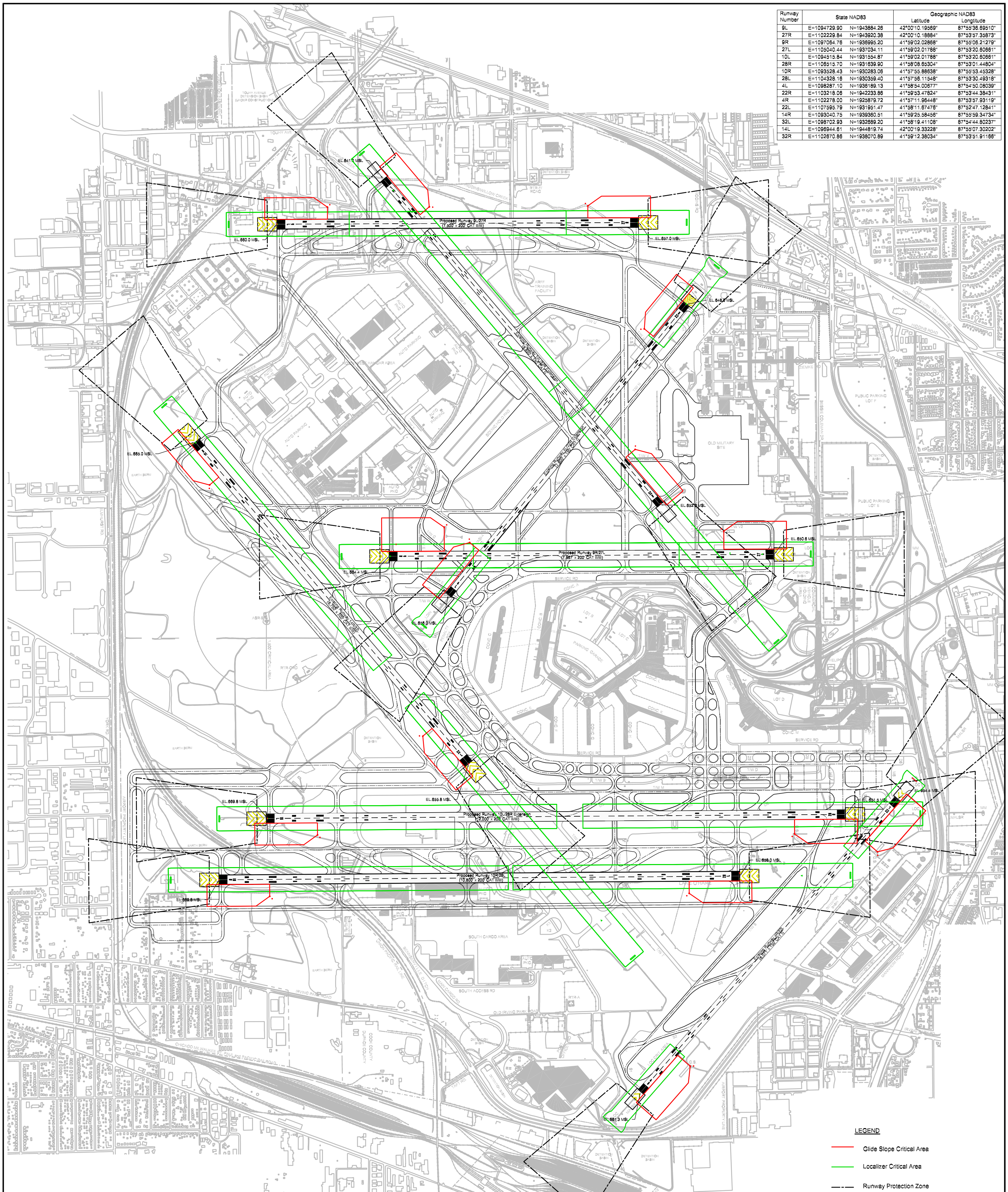
2. Subsequent to comments by the FAA Chicago Airport District Office, Options 1, 2, and 5 (dated March 12) were revised as follows:

   Option 1 - South Airfield – Illustrated in Exhibit II-1
   Revision 1 - Location west of Runway 10L:
   Dual north/south perimeter taxiways are located west of the approach end of Runway 10L. The outer perimeter taxiway is located outside the Runway 10L approach RPZ. The inner perimeter Taxiway is located inside the Runway 10L approach RPZ and would have use limitations during certain runway configuration operations.

   Revision 2 - Location south of Runway 10R approach RPZ:
   A dual east/west taxiway section was added 324 feet south of the Runway 10R parallel taxiway. It connects the perimeter taxiway to the Runway 10R exit/entrance taxiway connector. This taxiway will permit the taxi flow of aircraft to operate outside the Runway 10R RPZ.

   Revision 3 – Location south of Runway 10R approach RPZ :
   A holding bay (hold pad) was added adjacent to the taxiway connector serving the west end of Runway 10R. This holding bay will provide a standing space for aircraft awaiting ATC clearance and permit those airplanes already cleared to move to their runway takeoff position while ensuring queuing aircraft will remain outside the Runway 10R approach RPZ.

Runway Number	State NAD83		Geographic NAD83 Latitude	Longtitude
9L	E=1094729.90	N=1943884.26	42°00'10.19569"	87°55'36.69510"
27R	E=1102229.84	N=1943920.38	42°00'10.18884"	87°53'57.35873"
9R	E=1097064.76	N=1936995.20	41°59'02.02868"	87°55'06.21279"
27L	E=1105040.44	N=1937034.11	41°59'02.01788"	87°53'20.60661"
10L	E=1094515.84	N=1931554.87	41°59'02.01788"	87°53'20.60661"
28R	E=1106515.70	N=1931639.90	41°58'08.65304"	87°53'01.44804"
10R	E=1093528.43	N=1930283.06	41°57'55.88638"	87°55'53.45328"
28L	E=1104328.16	N=1930359.40	41°57'56.11548"	87°53'30.49318"
4L	E=1098287.10	N=1936189.13	41°58'54.00677"	87°54'50.08039"
22R	E=1103218.06	N=1942233.86	41°59'53.47824"	87°53'44.38431"
4R	E=1102278.00	N=1925879.72	41°57'11.96448"	87°53'57.93119"
22L	E=1107595.79	N=1931951.47	41°58'11.67476"	87°52'47.12841"
14R	E=1093040.75	N=1939360.51	41°59'25.58456"	87°55'59.34734"
32L	E=1098702.93	N=1932689.20	41°58'19.41108"	87°54'44.80237"
14L	E=1096944.61	N=1944819.74	42°00'19.33228"	87°55'07.30202"
32R	E=1102670.86	N=1938070.89	41°59'12.38034"	87°53'51.91166"



NOTE:
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GRAPHIC SCALE IN FEET

O'Hare International Airport

No	Revisions	Date

FUTURE AIRPORT DRAWING
Option 1

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CHICAGO Airport System

Exhibit II-1

Revision 4 – End Taxiway for Runway 22L:
An end taxiway had been proposed for Runway 22L for use in staging departures clear of Runway 28R arrivals. However, this taxiway cannot be developed without the staged aircraft being within the RPZ for Runway 28R. As such, it has been removed from the concept.

Option 2 - South Airfield – Illustrated in Exhibit II-2
Revision 1 - Location west of Runway 10L:
Dual north/south perimeter taxiways are located west of the approach end of Runway 10L. The outer perimeter taxiway is located outside the Runway 10L RPZ. The inner perimeter taxiway is located inside the Runway 10L approach RPZ and would have use limitations during runway operation.

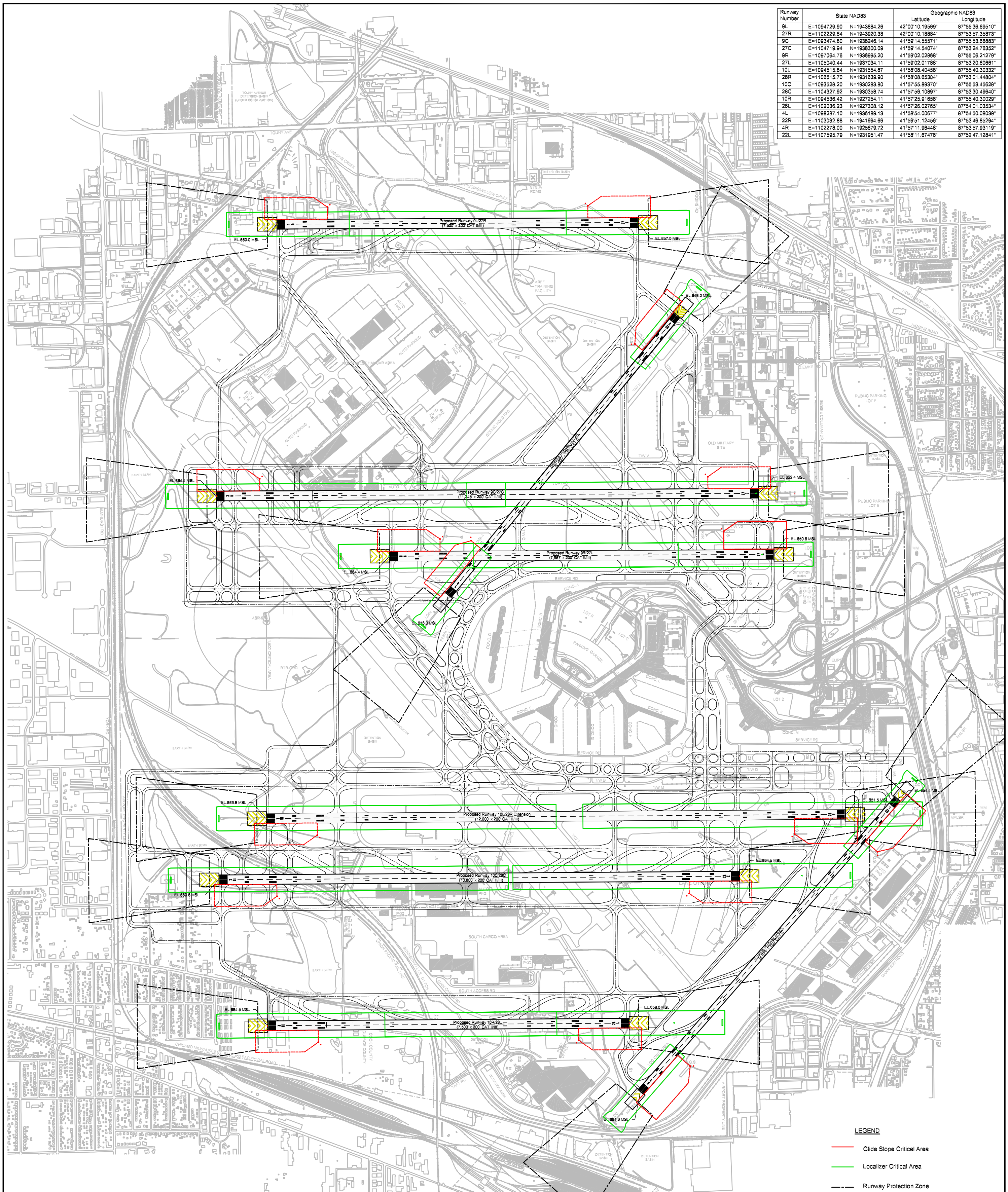
Revision 2 - Location west of Runway 10C:
The north/south perimeter taxiway is located 600 feet west of the approach end of Runway 10C. Because of its location within the Runway 10C RPZ, its use will have limitations during certain operating configurations.

Revision 3 - Location south of Runway 10C approach RPZ:
A dual east/west taxiway section was added 324 feet south of the Runway 10C parallel taxiway. It connects the perimeter taxiway to the Runway 10C taxiway exit/entrance taxiway connector. This taxiway will permit the taxi flow of aircraft to operate outside the Runway 10C RPZ.

Revision 4 – Location south of Runway 10C approach RPZ :
A holding bay (hold pad) was added adjacent to the taxiway connector serving the west end of Runway 10C. This holding bay will provide a standing space for aircraft awaiting ATC clearance for either Runway 10C or Runway 10R departures and permit those aircraft already cleared to move to their runway takeoff position while ensuring that the queuing aircraft will remain outside the Runway 10C RPZ.

Option 5 – South Airfield – Illustrated in Exhibit II-3
The west end of Runway 10L/28R is located further west than exists today and does not permit the construction of perimeter taxiways outside the Runway 10L/28R RPZs. By moving the Runway to the west, Taxiway S, in its current location, becomes a perimeter taxiway, however, it remains inside the Runway 28L RPZ. No revisions have been made to this Option.

Runway Number	State NAD83		Geographic NAD83 Latitude	Longtitude
9L	E=1094729.90	N=1943884.26	42°00'10.19569"	87°55'36.69510"
27R	E=1102229.84	N=1943920.38	42°00'10.18884"	87°53'57.35873"
9C	E=1093474.80	N=1938246.14	41°59'14.55571"	87°55'53.66883"
27C	E=1104719.94	N=1938300.09	41°59'14.54074"	87°53'24.76352"
9R	E=1097064.76	N=1936995.20	41°59'02.02868"	87°55'06.21279"
27L	E=1105040.44	N=1937034.11	41°59'02.01788"	87°53'20.60661"
10L	E=1094515.84	N=1931554.87	41°58'08.40458"	87°55'40.30332"
28R	E=1106515.70	N=1931639.90	41°58'08.65304"	87°53'01.44804"
10C	E=1093528.20	N=1930283.80	41°57'55.89370"	87°55'53.45628"
28C	E=1104327.92	N=1930358.74	41°57'56.10897"	87°53'30.49640"
10R	E=1094536.42	N=1927254.11	41°57'25.91656"	87°55'40.30029"
28L	E=1102036.23	N=1927308.12	41°57'26.02765"	87°54'01.03534"
4L	E=1098287.10	N=1936189.13	41°58'54.00677"	87°54'50.08039"
22R	E=1103032.88	N=1941994.66	41°59'51.12456"	87°53'46.85294"
4R	E=1102278.00	N=1925879.72	41°57'11.96448"	87°53'57.93119"
22L	E=1107595.79	N=1931951.47	41°58'11.67476"	87°52'47.12841"



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O'Hare International Airport

No	Revisions	Date

FUTURE AIRPORT DRAWING
Option 2

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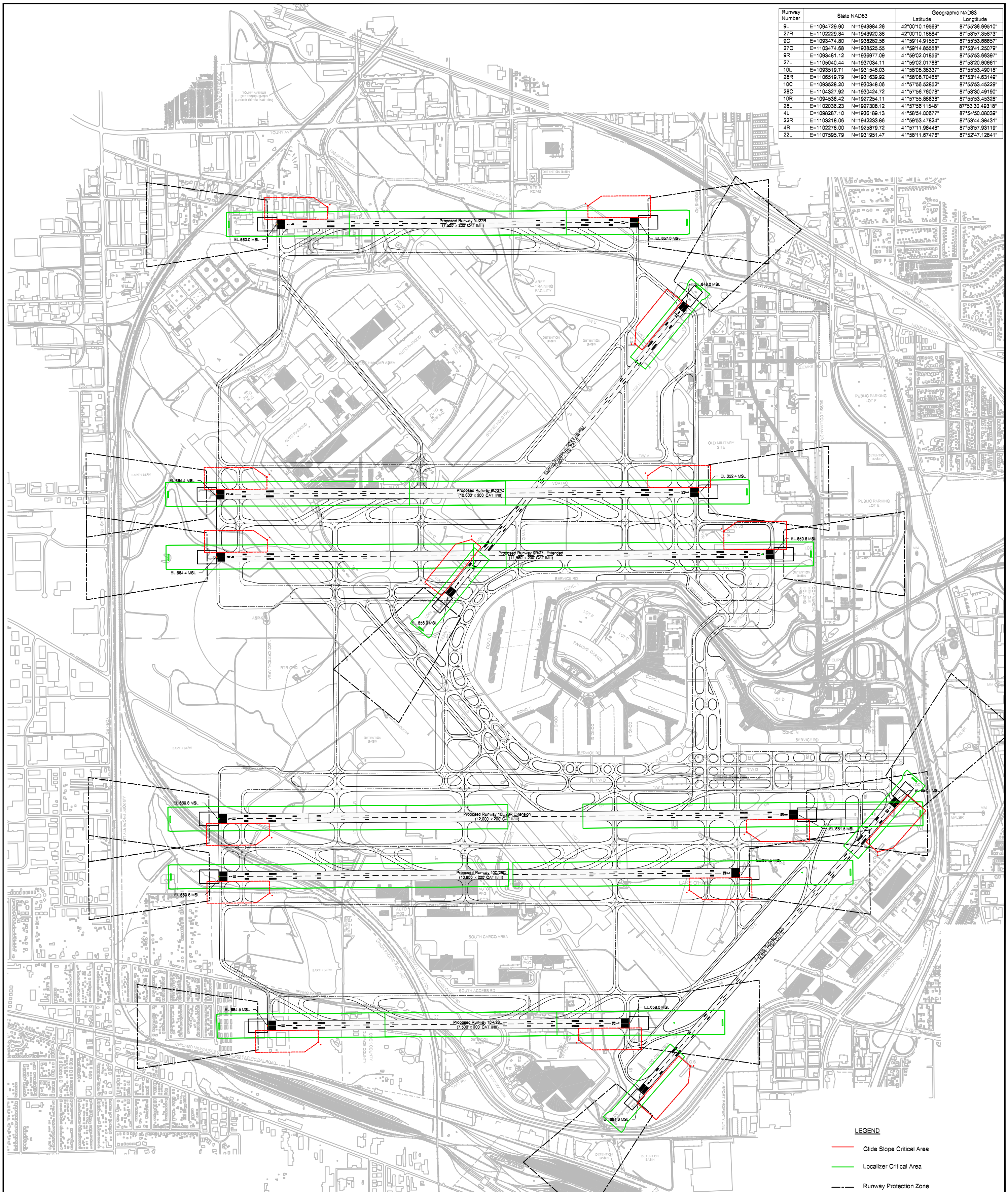
CHICAGO Airport System

Exhibit II-2

Runway Number	State NAD83		Geographic NAD83 Latitude	Longtitude
9L	E=1094729.90	N=1943884.26	42°00'10.19569"	87°55'36.69510"
27R	E=1102229.84	N=1943920.38	42°00'10.18884"	87°53'57.35873"
9C	E=1093474.80	N=1938282.56	41°59'14.91550"	87°55'53.66657"
27C	E=1103474.68	N=1938525.55	41°59'14.85558"	87°53'41.25079"
9R	E=1093481.12	N=1936977.09	41°59'02.01856"	87°55'53.66397"
27L	E=1105040.44	N=1937034.11	41°59'02.01788"	87°53'20.60661"
10L	E=1093519.71	N=1931548.03	41°58'08.38337"	87°55'53.49018"
28R	E=1106519.79	N=1931639.92	41°58'08.70465"	87°53'14.63149"
10C	E=1093528.20	N=1930348.06	41°57'56.52852"	87°55'53.45229"
28C	E=1104327.92	N=1930424.72	41°57'56.76078"	87°53'30.49190"
10R	E=1094536.42	N=1927254.11	41°57'55.88638"	87°55'53.45328"
28L	E=1102036.23	N=1927308.12	41°57'56'11548"	87°53'30.49318"
4L	E=1098287.10	N=1936189.13	41°58'54.00677"	87°54'50.08039"
22R	E=1103218.06	N=1942233.86	41°59'53.47824"	87°53'44.38431"
4R	E=1102278.00	N=1925879.72	41°57'11.96448"	87°53'57.93119"
22L	E=1107595.79	N=1931951.47	41°58'11.67476"	87°52'47.12841"



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No	Revisions	Date

FUTURE AIRPORT DRAWING
Option 5

RICONDO & ASSOCIATES

Chicago Airport System

Exhibit II-3

III. OPERATIONAL QUESTIONS AND ASSUMPTIONS FOR SIMULATION OF FUTURE CONCEPTS

1. Option 1, Option 2, and Option 5 are currently being input into the TAAM model. Current work is concentrating on loading and unloading of the TAAM network (taxiways, runways, terminals, gates etc.) to test the TAAM network's integrity. Certain operating assumptions have been input into the model to assist in the identification of compile and run-time debugging.

2. **Exhibit III-1** depicts Option 1, under which the airfield is operating to the east. As was initially proposed in Experiment 8 of the Experimental Design of March 5, 2002, arrival aircraft would expect Runways 04R, 10L, and either Runway 14R or Runway 09L. An arrival configuration using Runways 04R, 10L and 14R would preclude traditional routing of westbound departures without modifications of arrival descent ("dump-zones") for the arrival runways. The arrival configuration of Runways 04R, 10L, and 09L would allow westbound departures to be routed north of the Runway 09L dump-zone similar to present day procedures. Consequently, the arrival configuration currently being modeled in Experiment 8 is currently using Runways 04R, 10L, and 09L. Departures would expect Runways 09R, 10R, and 04L

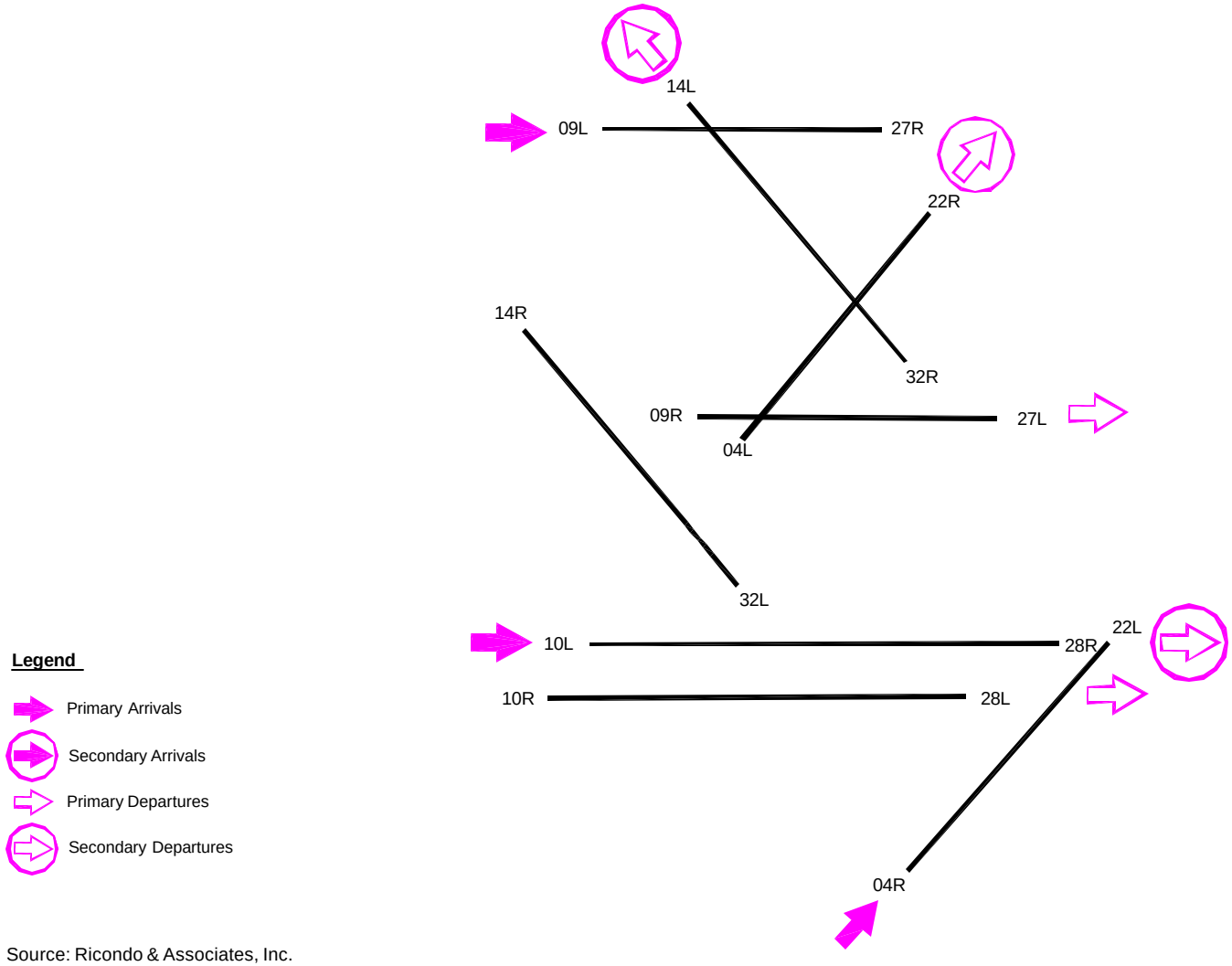
3. Runway 04R and Runway 10L are being utilized as the primary arrival runways. Runway 09L is used during periods of compacted arrival demand. Runway use strategies employed in Experiment 1, which attempt to maximize the use of Plan X Runways 09L and 04R, are currently being utilized for Experiment 8.

4. Westbound departure traffic over Iowa City VOR (IOW), Polo VOR (PLL), and Moline VOR (MZV) are currently being assigned Runway 04L along with the northbound fix of the Badger VOR (BAE). Aircraft departing over PETTY intersection and the eastbound departure fix of the Keeler VOR (ELX) are currently assigned to Runway 09R. Southbound fixes of GUIDO intersection, the Peotone VOR (EON), and the Roberts VOR (RBS), along with the Gipper VOR (GIJ), are currently assigned to Runway 10R. International departures destined to Europe are currently assigned to Runway 32R, while those international flights destined to Asia are currently assigned to Runway 10L.

5. The dependency of Runway 10R departures and Runway 04R arrivals is currently modeled such that Runway 10R departures may not takeoff until the Runway 04R arrival passes the extended centerline of Runway 10R.

Assumption questions:

- Should the airspace be designed that westbound departures would depart via the north portion of the west climb corridor, how many westbound departures can operate with approximately 8,000 feet of runway available?
- Should the arrival configuration of Runways 04R, 10L, and 14R be utilized, how would westbound departures be accommodated?



Source: Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.

Exhibit III-1

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north

1-VFR-East-Exhibit-III-1.dwg

Possible Runway Operating Configuration
Concept Layout Option 1 - VFR - East Flow

April 01, 2002

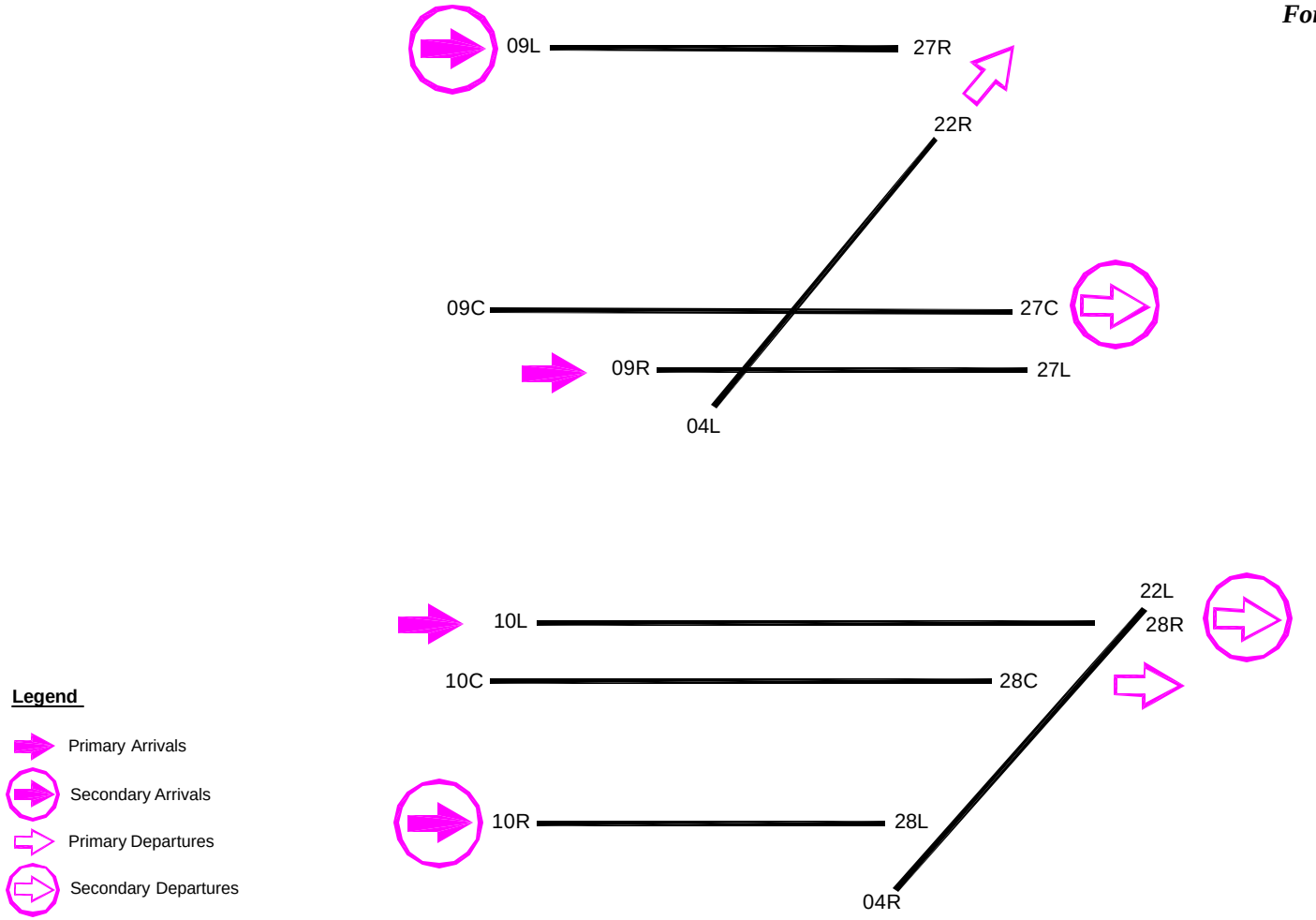
6. **Exhibit III-2** depicts Option 2, under which the airfield is operating to the east. As was initially proposed in Experiment 12 of the Experimental Design of March 5, 2002, arrival aircraft would expect Runways 09R and 10L with Runway 10R used during periods of compacted arrival demand from the south and Runway 09L used during periods of compacted arrival demand from the north. Departures would expect Runways 04L and 10C with Runway 09C and 10L available for periods of compacted departure demand and international traffic.

7. Westbound departure traffic over IOW, PLL, and MZV is currently being assigned Runway 04L along with the northbound fix BAE. Aircraft departing over PETTY intersection and the eastbound departure fix ELX are currently assigned to Runway 09C. Southbound fixes of GUIDO, EON, and RBS, along with the GIJ, are currently assigned to Runway 10C. International departures destined to Europe are currently assigned to Runway 10C, while those international flights destined to Asia are currently assigned to Runway 10L.

   Assumption questions:
   - Should the airspace be designed that westbound departures would depart via the north portion of the west climb corridor, how many westbound departures can operate with approximately 8,000 feet of runway available on Runway 04L?
   - Should Runway 09C be used for departures, would heavy/B757 jet arrival traffic be excluded from Runway 09R to minimize the effects of wake turbulence due to the location of the arrival threshold of Runway 09R in relation to the departure threshold of Runway 09C?

8. **Exhibit III-3** depicts Option 5, under which the airfield is operating to the east. As was initially proposed in Experiment 28 of the Experimental Design of March 5, 2002, arrival aircraft would expect Runways 09L, 09C, and 10C with Runway 10R available during periods of peak arrival demand. Departures would expect Runways 09R and 10L with Runway 09C and 10C available for periods of compacted departure demand.

9. Westbound departure traffic over IOW, PLL, and MZV is currently being assigned Runway 09R along with the northbound fixes of the BAE and PETTY in addition to the eastbound ELX fix. Southbound fixes of GUIDO, EON, and the RBS, along with the eastbound GIJ, are currently assigned to Runway 10L. International departures destined to Europe are currently assigned to Runway 09R, while those international flights destined to Asia are currently assigned to Runway 10L.



Source: Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.

Exhibit III-2

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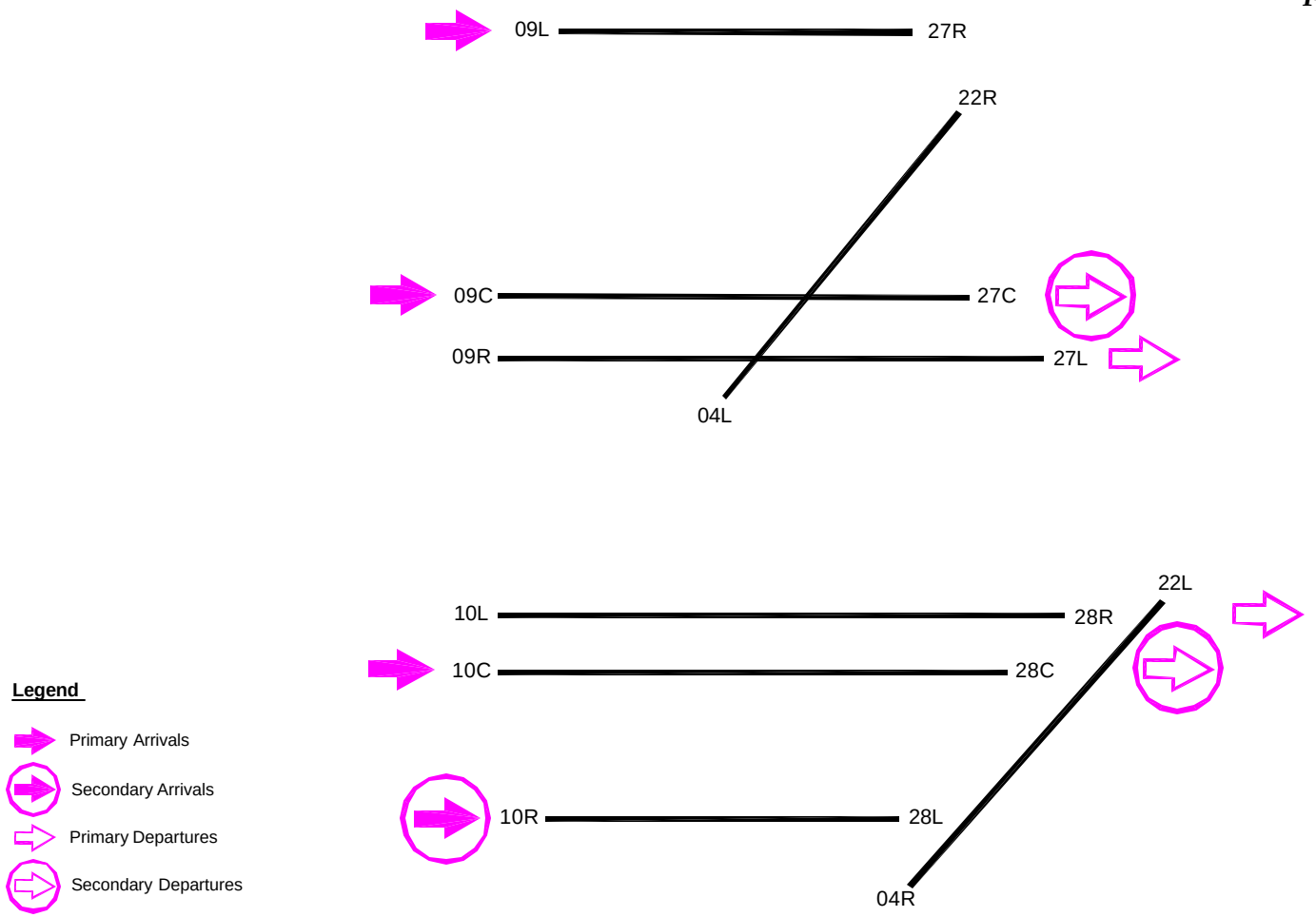
north

2-VFR-East-Exhibit-III-2.dwg

Possible Runway Operating Configuration
Concept Layout Option 2 - VFR - East Flow

April 01, 2002



Source: Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.

Exhibit III-3

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north

5-VFR-East-Exhibit-III-3.dwg

Possible Runway Operating Configuration Concept Layout Option 5 - VFR - East Flow

April 01, 2002